

WHAT IS CLAIMED:

1. A method of presentation of 3D models in a 3D data display, comprising:

displaying data in an overview mode where localization markers can be

set, manipulated and viewed; and

5 displaying data in a local mode where data in an interest region

surrounding a localization marker are rendered using different display

parameters.

2. The method of claim 1, wherein said different display parameters provide
10 greater detail.

3. The method of claim 2, wherein said greater detail includes one of
enlargement or display of additional or alternate properties of the data according to a
defined representational scheme.
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4. The method of claim 1, wherein said different display parameters include a
scale change.

5. The method of claim 4, wherein the local mode display uses one of the
20 localization markers or a user-designated point as a center of scaling.

6. The method of claim 5, wherein the local mode display moves the center of scaling to an optimum viewing point in the display.

5 7. The method of claim 1, wherein in the overview mode the localization
markers are displayed without regard to their being partially or totally occluded by
opaque regions of the model(s).

8. The method of claim 1, wherein in the overview mode the localization
10 markers are displayed with regard to being partially or totally occluded by opaque
regions of the model(s);

9. The method of claim 1, further comprising displaying data in a cycling mode, wherein a user may step through local mode displays of all current detail regions.

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10. The method of claim 1, further comprising simultaneously displaying one or more selected regions of interest using their respective local mode display parameters, while displaying all or part of the non-selected portions of the model(s) using overview mode display parameters.

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11. The method of claim 1, wherein the boundaries of a region of interest are controllable by the user.

12. The method of claim 10, wherein a user may set and adjust parameters governing region of interest boundaries globally or specifically to each individual region of interest.

13. The method of claim 12, wherein a user may modify region of interest boundaries in overview mode, in local mode, or in both overview and global mode.

14. The method of claim 1, wherein in overview mode the localization markers are displayed using an indication icon.

15. The method of claim 1, wherein in overview mode boundaries of the region of interest surrounding each potential localization marker point are displayed, such that a user can see what a given region of interest would contain.

16. The method of claim 1, wherein in overview mode a localization marker is displayed at point.

17. The method of claim 16, wherein in overview mode a potential region of interest is displayed surrounding each localization marker point, rendered using local mode display parameters.

5 18. The method of claim 17, wherein when viewing the potential region of interest, a user can change its shape.

19. The method of claim 18, wherein in overview mode as a user moves a cursor or other indicator through the model the displayed potential region of interest
10 associated therewith moves accordingly.

20. The method of claim 1, wherein a region of interest can have boundaries parallel to those of the overview mode display or nonparallel to the boundaries of the overview mode display.

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21. The method of claim 1, wherein each region of interest associated with each localization marker can have unique boundaries of arbitrary shape.

22. A computer program product comprising:
20 a computer usable medium having computer readable program code means embodied therein for controlling the scaling of a 3D computer model in a 3D data

display system, the computer readable program code means in said computer program product comprising:

computer readable program code means for causing a computer to display data in an overview mode, wherein localization markers can be set,

5 manipulated and viewed; and

computer readable program code means for causing a computer to display data in a local mode wherein data surrounding a localization marker are rendered using different display parameters.

10 23. The computer program product of claim 22, further comprising

computer readable program code means for causing a computer to display a potential region of interest in overview mode surrounding each point a user considers.

24. The computer program product of claim 23, further comprising

15 computer readable program code means for causing a computer to display each said potential region of interest using its associated local mode display parameters.

25. The computer program product of claim 22, further comprising

20 computer readable program code means for causing a computer to facilitate interactive modification by a user of at least one of region of interest boundaries, region of interest display parameters, and localization marker icons, said interactive modification operable while the system is in at least one of overview mode, local mode and both overview mode and local mode.

26. A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to implement a method to control scaling of a 3D computer model in a 3D display system, said method comprising:

displaying data in an overview mode wherein localization markers can be set,
5 manipulated and viewed; and

displaying data in a local mode wherein data surrounding a localization marker is rendered using different display parameters.

27. The method of claim 1, further comprising:

10 displaying data in a sub-local mode, wherein data in one or more sub-regions of interest respectively surrounding one or more sub-localization markers are rendered using different display parameters than those of local mode;

wherein said sub-localization markers are set, manipulated and viewed in local mode, and located within a particular region of interest surrounding a localization
15 marker.

28. The method of claim 27, wherein:

sub-localization markers have all properties in relation to sub-regions of interest that localization markers have in relation to regions of interest;

20 sub-local mode has all properties in relation to local mode that local mode has in relation to overview mode; and

sub-localization markers are displayed within their particular region of interest

whenever the particular region of interest that contains them is displayed.